

5-1508 Steep Slope Standards

Comment: Section 5-1508, “Steep Slope Standards,” amends existing Section 5-1508 in the General Development Standards Chapter of the Zoning Ordinance. During Phase Two, we recommend this section be folded into a new “Environmental Protection Standards” chapter. It will remain separate from MDOD and RSCOD standards since the County does contain steep and moderately steep slope areas outside of these overlay districts; however where the MDOD covers steep slopes, the steep slope standards shall apply.

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(A) **Purpose and Intent.** Loudoun County’s General Plan policies recognize that improper uses and disturbance in steep slope areas cause erosion, result in structural failure of structures and roads, and lead to downstream flooding and other hazards. Development in these areas also requires higher volumes of cut and fill and greater removal of vegetation than on flatter lands. The provisions in this section, including a prohibition of development on steep slope areas greater than 25% and limitations on development on moderately steep slope areas from 15% to 25%, are intended to reasonably implement the General Plan policies, and more specifically promote the following:

- (1) Undertake development in a manner that will protect life and property from hazards due to slope, unstable and erodible soils, earth movement, and other geologic and hydrologic hazards;
- (2) Reduce potential for increased erosion, sedimentation, and surface runoff and the resulting adverse impacts on water quality;
- (3) Promote a safe means of ingress and egress for vehicular and pedestrian traffic in sloped areas;
- (4) Preserve the visual quality of steep slope areas, which are a valuable natural and economic resource to the County; and

- 1 (5) Encourage innovative and imaginative building techniques to
2 create structures and site plans that are suited to sloped terrain.

3 (B) **Applicability and Exemptions**

4 (1) **Applicability.**

- 5 (a) General Rule. Except as exempted in (B) below, this
6 section shall apply to all land disturbing activity, including
7 new development and subdivision, proposed on properties
8 or the areas of properties containing “moderately steep
9 slope areas” or “steep slope areas,” as those terms are
10 defined in Section 5-1508(C)(2) below and as shown on the
11 Loudoun County Soils Map, as amended from time-to-time
12 by the County Soil Scientist, and as shown on the Loudoun
13 County Steep Slopes Map.

- 14 (b) Steep Slopes in the RSCOD/Conflicting Provisions. This
15 section shall apply to moderately steep slope areas or steep
16 slope areas, as defined in Section 5-1508(C)(2) below, that
17 are located within a Protected River and Stream Corridor
18 subject to Section 4-2000, River and Stream Corridor
19 Overlay District (RSCOD). However, to the extent that the
20 standards in this Section 5-1508 conflict with provisions in
21 the RSCOD (Section 4-2000), the standard that affords the
22 steep slopes the greater level of protection shall apply.

- 23 (2) **Note re. Exemptions.** *The extent and type of exemptions, if any,*
24 *are discussed in the vested rights section of Clarion Associates’*
25 *Annotated Outline of Proposed Land Use Regulations for Loudoun*
26 *County. This subsection on exemptions will be drafted at a later*
27 *time according to the direction received after discussion and*
28 *public input on the annotated outline.*

29 (C) **Establishment of Steep Slope Areas**

- 30 (1) **County Mapping as Resource.** The County Soils Map and Steep
31 Slopes Map shall be used as the source of delineation of sloped
32 areas and related unstable soils. A field-prepared or aerial
33 topographic survey of greater accuracy (2 feet or smaller contour
34 interval), certified by a licensed surveyor or engineer and approved
35 by the County, may also be used.

- (2) **Identification of Steep Slope Areas.** Steep slope areas are classified into one of the following two different categories:
- (a) **Moderately Steep Slope Areas.** This category of steep slope area includes only land areas with slopes from 15% to 25% (identified as slope Class D on Loudoun County Soils Map).
- (i) Land areas that have moderately steep slopes (15% to 25%), together with unstable soils, are categorized as “Steep Slope Areas” under subsection (b) below.
- (b) **Steep Slope Areas.** This category of steep slope area includes land areas with either of the following characteristics:
- (i) Slopes greater than 25% (identified as slope Class E on Loudoun County Soils Map); or
- (ii) Moderately steep slopes, as defined in (a) above, together with Unstable Soils including the following soil series: Morven (soil mapping unit 13), Airmont (units 27 and 59), Lew (unit 88), and Springwood (units 90 and 91), as described in the Interpretive Guide to the Use of Soils Maps in Loudoun County.
- (3) **Minimum Size of Steep Slope Area.** This Section 5-1508 shall only apply if the steep slope area exceeds 5,000 square feet in land area. For purposes of this provision, the entire contiguous area of the steep slopes shall be included in the minimum size calculation, regardless of the number of individual lots or different land ownerships involved.

Comment: Amend Land Subdivision and Development Ordinance (LSDO) to state that “applicants shall avoid laying out lots in steep slope areas that do not contain sufficient buildable area and hinder compliance with the provisions of Section 5-1508, Steep Slope Standards, of the Zoning Ordinance.”

1 (D) **Permitted Uses and Activities.**

2 (1) **Steep Slope Areas**

3 (a) **Applicability.** This subsection (D)(1) applies to lands with
4 Steep Slope Areas, as defined in subsection (C)(2)(b),
5 above.

6 (b) **General Prohibition on Land Disturbance.** Land
7 disturbing activities, including but not limited to clearing,
8 excavation, grading, construction, reconstruction, and
9 investigative land disturbing activities such as test wells,
10 are prohibited on any Steep Slope Area, except as allowed
11 under subsections (c) and (d) below.

12 (c) **Permitted Uses and Activities.** The following uses are
13 permitted on Steep Slope Areas, subject to the applicable
14 development standards in Section (E) below:

15 (i) Agriculture;

16 (ii) Silviculture uses, subject to a Forest Management
17 Plan;

18 (iii) Passive recreation uses, including trails; and

19 (iv) Open space, and other conservation uses.

20 (v) Limited land disturbing activity for the sole purpose
21 of surveying and land investigation.

22 (d) **Special Exception Uses and Activities.** The County may
23 permit minor utilities and driveways on Steep Slope Areas
24 when no feasible alternative exists, subject to Section 6-
25 1300, Special Exceptions. All applicable development
26 standards in the Facilities Standards Manual, and the
27 requirements under subsection (E)(4), Roads and Driveway
28 Standards, below, shall apply.

29 (2) **Moderately Steep Slope Areas**

30 (a) **Applicability.** This subsection (D)(1) applies to lands with
31 Moderately Steep Slope Areas, as defined in subsection
32 (C)(2)(a), above.

33 (b) **Permitted Uses and Activities.** Notwithstanding uses
34 otherwise allowed by the applicable underlying zoning
35 district, the only principal uses allowed on Moderately

Steep Slope Areas shall be the following, subject to the applicable development standards in Section (E) below:

- (i) Agriculture;
- (ii) Silviculture activities, subject to a Forest Management Plan;
- (iii) Single-family detached residential uses (including related drainfields);
- (iv) Passive recreation uses;
- (v) Open space, and other conservation uses;
- (vi) Limited land disturbing activity for the sole purpose of surveying and land investigation; and
- (vii) Minor utilities, roads and driveways, subject to standards in the Facilities Standards Manual and in subsection (E)(4), below.

(c) **Special Exception Uses on Moderately Steep Slope Areas.** The County may permit the following special exception uses on Moderately Steep Slope Areas, subject to Section 6-1300, Special Exceptions, and subject to all applicable development standards in Section (E) below:

- (i) Subdivisions with three (3) or more lots; and
- (ii) Cluster subdivisions.

(E) **Development Standards.** Development and uses on steep slope areas shall take into account the way in which land use planning, soil geology, hydrology, civil engineering, environmental design, architectural and landscape design, and related disciplines are applied. At a minimum, development on steep slope areas shall comply with the guidelines in the Facilities Standards Manual and the following standards.

***Comment:** Some of the following standards may be included as part of the Facilities Standards Manual during Phase 2 of this project.*

(1) **Grading Standards.** The applicant shall preserve natural landforms and minimize grading and other land disturbance.

(a) **Cutting to Create Benches.** Cutting and grading to create benches or pads for additional or larger building sites shall be avoided to the maximum extent feasible.

- (b) **Limits on Changing Natural Grade.** The original, natural grade of a lot shall not be raised or lowered more than four (4) feet at any point for the construction of any structure or improvements, except:
- (i) The lot's original grade may be raised or lowered a maximum of six (6) feet if retaining walls are used to reduce the steepness of man-made slopes, provided that the retaining walls comply with the requirements set forth in this Section.
 - (ii) As necessary to construct a driveway from the road to a garage or parking area, grading changes or retaining walls up to 6 feet may be allowed
 - (iii) The County may approve other exceptions to this standard if it finds that the proposal:
 - 1. Is consistent with the intent of this Section;
 - 2. Offers an exemplary design that preserves the natural land form; and
 - 3. Results in less total site disturbance than would compliance with the maximum limits on changing natural grade stated in this subsection.
- (c) **Grading for Accessory Building Pads Discouraged.** Separate building pads for accessory buildings and structures other than private garages, such as tennis courts, swimming pools, outbuildings, and similar facilities, shall be discouraged on moderately steep slope areas.
- (d) **Limits on Man-Made Slopes**
- (i) Man-made slopes shall not exceed 25% or a height of 50 feet.
 - (ii) The County may allow exceptions to slope and height requirements for man-made slopes in (d)(i) related to the following activities:
 - 1. Highway noise attenuation;
 - 2. Embankments for reservoirs; and
 - 3. Road embankments.
 - (iii) All cut, filled, and graded slopes shall be recontoured to the natural, varied contour of the surrounding terrain.

1 (2) **Excavation.** To the maximum extent feasible, excavation for
2 footings and foundations shall be limited to lessen site disturbance
3 and ensure compatibility with sloped terrain.

4 (3) **Retaining Walls.** Use of retaining walls is encouraged to reduce
5 the steepness of man-made slopes and to provide planting pockets
6 conducive to vegetation, with adherence to the following
7 standards:

8 (a) Retaining walls shall not exceed four (4) feet in height from
9 the finished grade, except for:

10 (i) A structure's foundation wall (i.e., a retaining wall
11 may be part of a permitted dwelling unit);

12 (ii) As necessary to construct a driveway from the street
13 to a garage or parking area; and

14 (iii) As otherwise expressly allowed by this Section.

15 (b) In no case shall a retaining wall exceed six (6) feet in
16 height.

17 (c) Terracing shall be limited to two tiers, except that the
18 County may approve more than two tiers when a greater
19 number of tiers will result in less land disturbance and less
20 steep man-made slopes.

21 (i) The width of the terrace between any two vertical
22 retaining walls shall be at least five (5) horizontal
23 feet.

24 (ii) Terraces created between retaining walls shall be
25 permanently landscaped or revegetated pursuant to
26 Landscaping Standards in Section 5-1300.

27 (d) Retaining walls shall be faced with stone or earth-colored
28 materials similar to the surrounding natural landscape.

29 (4) **Roads and Driveway Standards**

30 (a) All roads and driveways and other vehicular access routes
31 shall follow natural contour lines to the maximum extent
32 feasible.

33 (b) No roads, driveways, or other vehicular access routes shall
34 cross steep slopes greater than 50%, except driveways as
35 allowed by Section 5-1508(D)(1)(d), "Special Exception
36 Uses and Activities [on Steep Slope Areas]."

- (c) Roads shall not be constructed on steep slopes of 25% or greater, unless no other feasible alternative exists to access a legal lot of record approved prior to the effective date of this Section.
- (d) Driveways and other vehicular routes used to access a parcel shall not be allowed to cross slopes between 25% and 50%, except driveways as allowed by Section 5-1508(D)(1)(d), "Special Exception Uses and Activities [on Steep Slope Areas]." In addition, the County may allow a short run of no more than 100 feet or 10% of the driveway's entire length, whichever is greater, based on a geotechnical study and findings that:
- (i) In no case shall any short run exceed 100 feet or 10% of the entire length of the driveway, whichever is greater; and
 - (ii) Such driveway will not have significant adverse visual, environmental or safety impacts, or appropriate engineering or other measures will be taken by the developer to substantially mitigate any such adverse impact; and
 - (iii) No alternative location for access is feasible or available.
- (e) The County encourages shared driveways to reduce land disturbance, provided that shared driveways are placed in an easement.
- (f) The centerline grade of private roads and driveways shall comply with applicable standards stated in the Loudoun County Facilities Standards Manual.
- (g) Storm drainage and culvert design shall conform to the requirements of the Loudoun County Facilities Standards Manual.
- (5) **Revegetation Required.** Any slope exposed or created in new development on moderately steep slope areas shall be landscaped or revegetated pursuant to the standards and provisions set forth in Section 5-1300, Landscaping, Buffering and Tree Preservation.
- (6) **Stormwater Best Management Practices.** The applicant shall incorporate stormwater management Best Management Practices and erosion and sediment control practices, as required by Chapter 5 of the Facilities Standards Manual and such practices shall be

1 approved by the Department of Building and Development prior to
2 issuance of a zoning permit. (**Note:** *Existing requirement with*
3 *minor text changes*).